FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

PSD2 IN BELGIUM: STRATEGIC DECISIONS BEYOND COMPLIANCE

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Content

1. Introduction 4
1.1 Setting the scene 4
1.2 Problem statement 5
1.3 Research question 6
2. Research design 7
2.1 Methodology 7
2.2 Case studies 10
3. Theoretical background 11
3.1 Regulatory environment of the European banking industry post-subprime crisis 11
3.2 PSD2 and the payments industry 13
3.2.1 Operationalization of PSD2 in the European Union 13
3.2.2 Operationalization of PSD2 in Belgium 17
3.3 Strategic decision-making due to regulatory change 18
3.4 Analytical framework: four generic strategies to cope with PSD2 22
3.4.1 Comply 23
3.4.2 Compete 25
3.4.3 Expand 26
3.4.4 Transform 27
4. Empirical results 28
4.1 KBC 28
4.2 Belfius 30
4.3 BNP Paribas Fortis (BNPPF) 32
4.4 ING Belgium 34
4.5 Summary of the results 36
5. Discussion and analysis 37
5.1 Comply 37
5.2 Compete 38
5.3 Expand 40
5.4 Transform 42
6. Conclusion 44
6.1 Observations 44
6.2 Academic relevance 46
6.3 Limitations of the research 46
6.4 Recommendations for future research 47
Reference list 48

1. Introduction

1.1 Setting the scene

The European payments industry is at a critical point of disruption. Payment service providers (PSPs) need to keep up with an increasing demand of digital payments. More and more transactions are going through mobile devices and require tailored payment solutions. New technologies, such as artificial intelligence, blockchain and the 'Internet of Things', are a driving force behind the development of alternative payment methods. In order to stay relevant to their customers, banks are required to develop innovative solutions. Furthermore, the entrance of new players, including FinTech (financial technology) and BigTech, to the market further pressures payment service fees to the detriment of banks.

To regulate these trends, the European Commission introduced the Payment Services Directive II (PSD2) in 2015. In 2018, the regulation came into force. After this date, banks had an adaptation period of one and a half years to become compliant with the Regulatory Technical Standards (RTS). The directive is a revision of the Payment Services Directive I (PSD1) and aims to create a level playing field for all payment service providers, enhance customer protection, stimulate innovation and increase competition in the payments industry. The revision of the first Payment Services Directive was deemed necessary because technological developments created legal uncertainty and security issues. PSD2 widens the scope of the regulation to non-traditional payment service providers and restores synchronization across member states. The essence of the PSD2 is the requirement for banks to facilitate Third Party Providers (TPPs) access to customer's online account under their explicit consent. Opening this data to TPPs reduces the market power of banks and stimulates the entrance of new competitors. Customers can ultimately benefit from increasing competition with cheaper, more innovative and more secure payment services.

1.2 Problem statement

The life of the ordinary consumer has drastically changed over the past decades. With the arrival of mobile devices, anyone can order goods and services at any time. We don't have to leave our houses anymore to buy from online retailers. These retailers have developed seamless customer experiences and customers have adjusted their expectations accordingly. Customers have increased their requirements significantly and demand a smooth purchasing journey, with tailored offers and personalized recommendations. This digitization process is also changing the way how customers buy and consume financial products and services.

However, traditional banks still have a longer digitisation process ahead of them. Whereas banks have increased their channels with online services and mobile apps, they leave their customers frustrated with their current service offering. The demand for a forward-looking personal finance analysis and personalized offers calls for a drastic shift in the banking industry (Guibaud, 2015). According to an American study (Scratch, 2013), 53% of American Millennials don't think their bank offers anything different than other banks. This leaves the opportunity for banks to develop a distinct 'unique selling proposition'.

An old-fashioned service offering and the lack of differentiation leads to low brand loyalty. Experts believe that PSD2 will have a significant impact on the future of banks and the entire payments industry (PwC UK, 2018; Financier Worldwide, 2017). With banks losing their age-old monopoly on customer balance and transaction data, the competition will intensify as more financial actors will be able to provide similar services. This puts banks at a critical juncture and forces them to make an important strategic decision. Do banks perceive the PSD2 as a constraint, or do they embrace the regulatory change as a strategic opportunity? Current research is mainly focused on the regulation and its technical implications. Literature that covers the strategic opportunities is limited and doesn't consider cultural or geographical disparities between banks. This thesis aims to understand the strategic decisions that traditional banks take due to PSD2. With the research, we are trying to break with the traditional, negative view on regulations. The focus of the paper is therefore less on the implementation of PSD2, but more on the opportunities that stem from the legislation.

1.3 Research question

In this thesis we are trying to answer the following research question:

Which strategic choices have been perceived by the Belgian banks due to PSD2 and which were their (re)actions?

Since its introduction in 2015, PSD2 has been a hot topic in the payments industry. The cornerstone of the regulation is the Access to Accounts (XS2A) rule. This rule states that banks need to give payment service providers access to transaction data of account-holding customers under their explicit consent. The legislator defines a broad framework of what should be built, but does not specify how this access should be provided. Banks are relatively free in how they implement this and how they deal with the various risks that this access entails, such as data security and operational risks. Besides these risks, there is also a strategic element to PSD2. For FinTech and even non-financial companies, the access to customers' payment data enables them to build new products and services. Clearly, this will also have an impact on the business models of banks. Traditional banks must ask themselves whether they see PSD2 as a pure compliance project, or whether they want to go along with this wave of innovation. Whatever choice they make, PSD2 promises to have a significant impact on traditional banks and we can already see this today.

To address this research question, we will use a qualitative method, which will be discussed in chapter two 'Research Design'. Next, the reader will be further introduced to the topic in chapter three 'Theoretical background'. We will present some key concepts of the payments industry and the regulation itself. Furthermore, a theoretical framework with four generic strategies to act upon PSD2 is illustrated. The findings of our research will be described in chapter four 'Empirical results' and analysed through the framework in chapter five 'Discussion and Analysis'. Finally, chapter six 'Conclusion' will present the conclusions on our results, contribution to research and limitations of the study. We will end this section with suggestions for future research.

2. Research design

The aim of this chapter is to discuss the methodology that is used to answer the research question and to elaborate on the data sources.

2.1 Methodology

The research design determines how the research question will be answered. As the topic is relatively new and literature on it is limited, it is recommended to conduct an exploratory, qualitative analysis (Baarda, Bakker, Boullart, Julsing, Fischer, Peters & van der Velden, 2018). The goal of this thesis is to describe the strategic approach of banks due to PSD2. Since the banks must bear the regulatory burden and its corresponding implementation, they are an interesting research subject. More specifically, this thesis will focus on the Belgian banks, which are considerably different from their colleagues in the neighbouring countries (Timmerman & Delhez, 2017).

The data collection method consists of semi-structured online interviews. First of all, we gained a better understanding of the payments industry and PSD2. This was done by using secondary sources, namely articles available online via Google Scholar and Ghent University Library. Additionally, a primary source was used in the form of an introductory interview held with an expert in PSD2 to understand how compliance happened. The interviewee was Dimitri Vaerendonck, Process Manager at KBC. This was a very open dialogue meaning that the structure of the interview was not fixed. The aim was to collect as much information as possible and to be introduced to the main principles of PSD2.

After exploring the subject, four online interviews with experts of four different Belgian banks were performed. This method enables a detailed analysis of the proposed research question. No a priori hypotheses are drawn up, because it is an exploratory study with the aim of collecting as much information as possible. The interviews are closed and semi-structured according to the analytical framework – Comply, Compete, Expand & Innovate – which will be set out in the next chapter. We identified a few key characteristics for each strategy and formulated questions based on those characteristics. An overview of the questions can be found in table X. This style also allow room for dialogue and follow-up questions (Leu, Coiro, Knobel, & Lankshear, 2008). The interviews consist of two parts. First, the interviewee introduces him- or herself. The respondent will be asked to tell his role in the organization and their involvement with PSD2. Second, the interviewee will be asked some open questions that characterise the four strategies. The respondents receive the questions in advance, to give them the opportunity to prepare the interview, as well as to introduce the

framework. Furthermore, the whole interview is recorded and transcribed. Transcribing is a time-consuming task, but it is very useful to become familiar with the data. Once all interviews had been transcribed, they were summarised. The summaries were used to identify patterns in the interviews, but also to reveal differences between the banks. This allows an extensive and objective analysis of the responses (Bell, Bryman, & Harley, 2019). The most important topics that were discussed are presented in chapter four. One drawback of the interview style is that not all questions might seem relevant to the interviewee and therefore might influence their motivation to respond to those questions (Berndtsson, Hansson, Olsson, & Lundell, 2008). The aim was to get a comprehensive picture of the Belgian payments industry and to reveal potential differences between the studied banks. A description of the participants of the study are presented in the next subsection.

The questions are rather general, so that as much information as possible could be obtained, since it concerns a new subject on which literature is still limited. The advantage of a semi-structured interview is that the interviewer still has the freedom to ask additional questions or to adapt the questions a bit to the respondent's specific situation (Berndtsson, Hansson, Olsson, & Lundell, 2008). Even though the interviewer has fixed a number of topics which he wants to discuss, during the interview there is still room for the respondent to bring in what he thinks is relevant, since they are the experts on the subject. A disadvantage of this method is that the interviews can be hard to compare, since they may vary in size, context or shape (Bell, Bryman, & Harley, 2019).

Category	Questions
Introduction	• Name? Function in the organization? • What is your role in the company? What are your main assignments in the company? • How were/are you involved with PSD2?
Comply	• Can you briefly describe the process of compliance? • How did your company deal with the uncertainty of the Regulatory Technical Standards? Did you adopt a proactive or a wait-and-see attitude? • What new capabilities were needed to meet the standards and how was your solution developed (in-house, outsourcing, ...)?
Compete	• Given the open access of TPPs via APIs, have you had to rethink your service offering or position in the value chain? • Has PSD2 enabled your organisation to offer new Payment Initiation Services (PIS) and Account Information Services (AIS), or redesign existing PIS and AIS? If so, which services and how do they work?
Expand	• Has PSD2 enabled your organisation to offer new services beyond basic payment and account information services? Think creditworthiness verification, real-time financial advice, personal financial planning and management, advanced loan application processes, or digital identity services. • Is one of your company's goals to become a 'bank as platform'?
Transform	• Does your bank see PSD2 merely as a threat leading to increased competition? If not, how do PSD2 and the corresponding open APIs improve cooperation with third party players? • How do you ensure that you are a desired cooperation partner for TPPs? • How are these services offered to the customer: via the bank's platform or via the TPPs' platform? • Does PSD2 accelerate the digitalisation process of your company? • Has PSD2 led to cultural or behavioural changes within your company? (For example, has there been more cross-functional collaboration within the bank; has the view on innovation, collaboration with TPPs... changed?)

Table X: Questionnaire overview

2.2 Case studies

For this research, four executives that are or were involved with the implementation of PSD2 of the four leading Belgian banks are interviewed. An overview of the four respondents can be found in Table X. All respondents were engaged in compliance with PSD2, although each from a different background, ranging from legal to business. The sampling of the respondents happened non-random. Interviewees were chosen on the basis of their expertise and position in the company. Since KBC, BNP Paribas Fortis, Belfius and ING Belgium account for 72% of total banking assets in Belgium (TheBanks.eu, 2020), they are considered to be representative for the complete Belgian banking sector. One remark that should be made here is that this selection only concerns big, listed organizations. Since one of the goals of the introduction of PSD2 by the European Union was to increase competition, it would also be interesting to see how challenger banks strategically react to PSD2 and its opportunities. However, a smaller sample is recommended for exploratory qualitative research (Berndtsson, Hansson, Olsson, & Lundell, 2008).

As PSD2 is a relatively new topic, it is recommended to use primary data sources (Berndtsson, Hansson, Olsson, & Lundell, 2008). All interviewees represent the company they work for. A concern that must be taken into account when interviewing insiders is that this method may affect the reliability of the data. A first reason is because they are emotionally connected to the subject. Respondents may emphasise the best elements of their company or even make the organisation look better than it is in reality. Second, the respondents all have a deep expertise in the subject, but never have a full picture of the complete implementation of PSD2 in their company and speak from their own experience. Most of the respondents are mainly strategic-oriented and have, for example, less understanding of the IT aspect that is involved in the PSD2 project. Therefore, there is a possibility that some data may not be consistent with reality. Third, confidentiality concerns may influence the richness of the collected data. Respondents will not share all the information about strategic decision since it might damage the company.

Organization	Name	Role
KBC	Erwin Nys	Product Manager and Policy Advisor
Belfius	Pieter Valcke	Expert Legal Counsel
BNP Paribas Fortis	Anonymous	Open banking department
ING Belgium	Begoña Blanco Sanchez	Head of Product Management Payments

Table X: Respondents Overview

3. Theoretical background

In this chapter, the theoretical framework is drawn up within which the research could be conceptualised. First, the legal aspect of this directive will be studied. We will situate the directive within the context of the broader EU regulations and standards for financial institutions that came in place over the past decade and will examine how it has been transposed into Belgian law. Once a thorough picture of the directive and the market has been formed, it will be examined what the strategic implications of the new regulation are for the Belgian banks. Finally, a theoretical framework that will be used to analyse the empirical results will be conceptualised. As mentioned in chapter two, this analysis consists of both primary and secondary data.

3.1 Regulatory environment of the European banking industry post-subprime crisis

Since the Financial Crisis (2007-2009), it became apparent that the financial sector needed a drastic change. Especially the impact of the failure of the financial system and the speed of contingency towards other economic systems were worrying. The crisis was an incentive to reassess the financial industry. Banks didn't have the required capacity to absorb shocks resulting from economic and financial stress. As a consequence, a series of regulations emerged with the overarching aim to increase financial institution's resiliency and transparency. In the last years, banks were introduced to new regulations at an increasing pace. Consequently, the compliance units of banks world-wide have gained a lot of attention.

The most incisive intervention arguably was the Basel III framework. Basel III is a set of rules that was developed by the Basel Committee of Bank Supervision and agreed upon in 2010. Initially, implementation should have been finalised in 2015, but has been postponed multiple times. Currently the deadline is until 2023 due to the COVID-19 crisis (Financial Stability Board, 2021). Basel III aims to strengthen capital buffers, increase liquidity requirements, improve risk management and stimulate transparency through enhanced disclosure. As a result, bank's capital ratios – both risk weighted and unweighted – increased through the years (Bank for International Settlements, 2020). As a counter argument, bank lobbyists claim that this will push up lending interest rates and therefore shrink the volume of loans to the real economy. However, the reduced probability of a crisis offsets this statement and results in a positive impact on the economy (Miles, Yang, & Marcheggiano, 2013). The lobbying around Basel III is not yet concluded, but the impact on financial institutions will be significant.

Due to its incisive nature and complexity, compliance to Basel III gained a lot of attention from the industry. A tight implementation timeframe, high levels of complexity and unforeseen interdependencies were perceived as risk factors (Härle, Lüders, Pepanides, Pfetsch, Poppensieker & Stegemann, 2010); as well as additional complexity for multi-national institutions and high data quality requirements (Chabanel, 2011). Literature on strategic opportunities beyond compliance is, however, limited. Chabanel (2011) argues that fast implementation enables banks to provide better management insight and reap future opportunities. There is also no evidence of financial institutions that have seized these opportunities.

Existing literature mainly focuses on the regulatory burden and fails to recognise the strategic opportunities beyond compliance. Levitt (1968) argues that high executives have a natural tendency to oppose regulatory change due to the fact that they are focused more on the internal environment of the company, and want to minimize the impact of externalities. Firms that only see regulations as restrictions and not as opportunities run the risk of falling behind. Companies can also benefit from embracing regulation, since developing new capabilities and resources as a result of regulatory changes can make an organisation more competitive (Pettus, Kor & Mahoney, 2007). On the negative side, companies that fail to meet the requirements of a regulation are running the risk to be exposed to stricter regulation (Gruca & Deepika, 1994).

Especially in the financial sector, where regulations are introduced at an increasing pace, thinking about regulations as a “cost-centre” can hold banks back (Blanchet, 2016). Gaining a deep understanding of the rationale behind the regulations enables financial institutions to differentiate themselves (Blanchet, 2016). More specifically, banks should adopt a proactive approach to seize opportunities such as first-mover advantages and new innovative products and services (Blanchet, 2016). The demand for change in the regulatory outlook is already evidenced by the appointment of senior compliance professionals with a strategic, operational or IT background by some banks (Liver, Lown, & Niedbala, 2021). They may provide a more strategic, holistic perspective to the organization.

Accenture (2014) also advocates a comprehensive and holistic approach in the context of regulatory change. They see in the revised Markets in Financial Instruments Directive (MiFID II) both a challenge and an opportunity. MiFID II is an European regulation that was adopted in 2014 and is directed at the financial markets. It aims to increase investor protection and create a more transparent market for investment services and activities. Opportunities in

conjunction with MiFID II that were mentioned are improvements in investment services, better client-tailored products and services due to enhanced product governance, reduced operating costs, strengthened risk governance and internal controls, and reduced reporting costs (Culp, Werthen, Frei, & Schelling, 2014).

Banks are starting to see regulatory change as an opportunity. Whereas the Basel framework had an indirect impact on the customer with a lower probability of bank failure, banks can leverage PSD2 to have direct customer impact through enhanced and more secure customer interaction, as well as innovative product and service offerings. The vast majority of the European leading banks see PSD2 more as an strategic opportunity than a threat (Maus & Mannberg, 2019; Berghuijs, Koetsier, & Veenman, 2017).

Each of these regulations concerns a different segment of financial institutions. They therefore have a different impact on each bank and each bank will treat compliance differently. We can, however, see a general shift in the approach to regulatory change. Whereas banks previously saw regulation as a restriction, they now also start to see regulation as an opportunity. More and more resources are being allocated to compliance due to the fact that compliance requirements are increasing, but also because budgets are provided to explore business opportunities in relation with the regulation (Blanchet, 2016). Furthermore, this mind-set change is also evidenced by the increasing demand of compliance officers with a strategic, operational or IT background (Liver, Lown, & Niedbala, 2021). Leveraging regulations to their advantage will become more and more important as the pace of regulatory change in the banking industry is intensifying. Some examples of topics that are on the agenda of European policymakers are a revision of the Capital Markets Union, a stronger focus on sustainable financing and a reassessment of the Anti-Money Laundering regulation.

3.2 PSD2 and the payments industry

3.2.1 Operationalization of PSD2 in the European Union

The **Payment Services Directive II** (PSD2) is a revision of the **Payment Services Directive I** (PSD1) from 2007 (2007/64/EC). PSD1 was intended to regulate the PSPs in the European Union and to create a single European payments market (SEPA). The goal of the Directive was to increase competition within the European Economic Area and to reduce the barriers for new entrants (i.e. non-bank businesses) in the financial sector. Regarding consumers, PSD1 aimed to facilitate quicker payments, improve consumer rights and provide more

transparent information on payments. Even though PSD1 was updated twice, in 2009 (924/2009/EC) and 2012 (260/2012/EC), it became outdated and was unable to regulate the modern PSP landscape. Electronic payments increased in complexity as well as in volume. This resulted into growing risks for the customers. A modernized legal framework was necessary to accommodate this trend.

To cope with these inconveniences, PSD2 was introduced. PSD2 dates from 25 November 2015 (2015/2366). It is a set of rules, laws and technical standards to regulate and harmonize the European payments industry. The directive came into force as of 13 January 2018 and replaced PSD1. The aim of this directive is to widen the scope of PSD1, to increase competition on the payment market by providing a 'level playing field', to create an integrated and harmonized payments market and to ensure customer protection. Safe and secure payment services are a prerequisite for a well-functioning payment services market. Payment services, in turn, are essential for the functioning of vital economic services and social activities (European Commission, 2013).

The revision of the rules concerning payment services was deemed necessary by the European legislator because of the technological developments that have taken place over the past decade in the field of payments. As a result of these evolutions, there was an increase in the number of electronic and mobile payments. Also, a lot of new players (mostly FinTech, but also online retailers and telecom companies) had entered the market with new technologies and innovative business models, the so-called TPPs. These TPPs were restricted by the archaic rules and limited to interfere in the payments market.

At the core of the new directive is the XS2A rule. This enables TPPs to access customer accounts under the explicit consent of the customer. PSD2 obligates Account-Servicing Payment Service Providers (ASPSP) – these are banks – to grant access through a dedicated and secure interface. The regulator didn't specify how this access should be facilitated, but most banks quickly came to the consensus that the Application Programming Interface (API) technology was the most appropriate. API is an interface that allows two applications to communicate with each other. A big advantage of this technology is that it allows new solutions to be integrated into old platforms. Apple, for example, uses APIs so that third parties could test and develop new apps on their infrastructure and integrate them directly into the operating system (Guibaud, 2015). This flexible technology enables TPPs to develop services and products on top of the infrastructure of ASPSPs and to compete with incumbent financial services.

Furthermore, the PSD2 directive regulates two new categories of PSPs, namely providers of PIS and AIS. By creating these two new types, the European legislator also seeks to regulate non-traditional players in the payments market, such as FinTechs, telecom and technology companies. PSD2 thus broadens its scope to include non-banking players, also known as TPPs. The legal status of TPPs was vague and could vary greatly from member state to member state. Moreover, under PSD1 there was also no supervisory body to monitor TPPs (European Commission, 2013). This led to major uncertainties, particularly regarding data security and consumer protection. By imposing the same regulation on TPPs as on banks, customers will be able to enjoy increased security.

The first category that PSD2 introduced are Account Initiation Service Providers (AISP) (European Commission, 2013). This provider has access to online account information of their client and wishes to aggregate the data of one or more accounts held at different banks. With an AISP, customers no longer have to log in to multiple banks but instead can interact with a single AISP. An AISP only has access to data that the customer explicitly consents to and could vary from transaction history to account balances. With this data, AISPs can analyse the customer's spending pattern or aggregate the customer's account information from different banks. Furthermore, there are also opportunities in the Business-to-Business segment with online cash management for example. A representation of the situation before and after PSD2 is illustrated in Figure X.

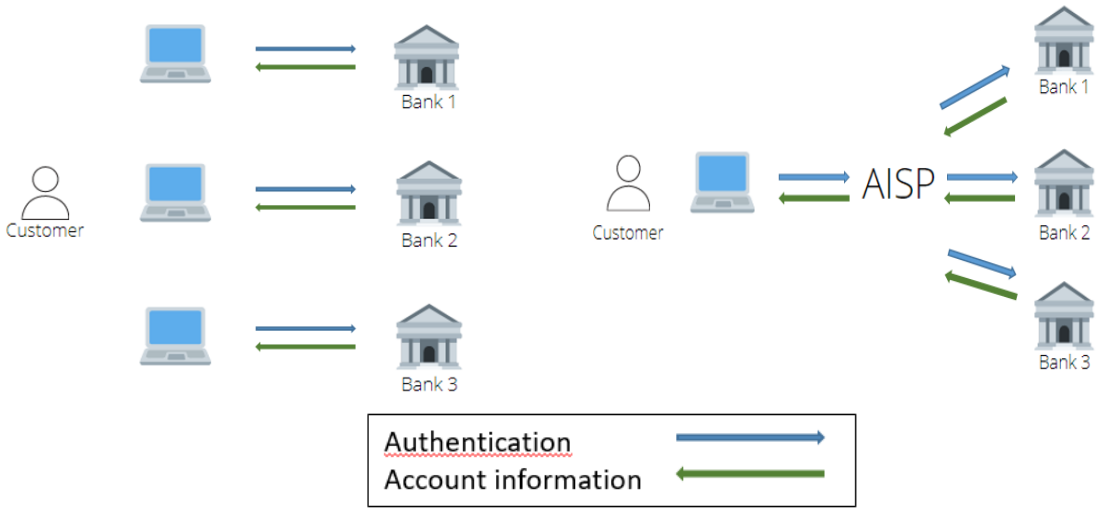


Figure X: AISP before (left panel) and after (right panel) the introduction of PSD2

The second category that is regulated by PSD2 are Payment Initiation Service Providers (PISP) (European Commission, 2013). PISPs are enabled to initiate online payments directly from the payer's bank account. ASPSPs must facilitate the technological connection, a

secure API, through which the PISP can access the payer's account and give a payment instruction to debit the account. Since the PISP can initiate a credit transfer directly from the payer to the payee, it can exclude the card networks, e.g. Visa and Mastercard, and their associated fees from the payment sequence. This renewed business model results in cheaper and faster payment solutions for the customer. PSD2 is therefore in line with the Interchange Fee regulation (European Comission, 2016), which caps the fees generated from card-based payments. Thus, the combination of PSD2 and the Interchange Fee regulation will have a tremendous effect on bank's payments revenues. An illustration of the PISP model before and after PSD2 is presented through Figure X.

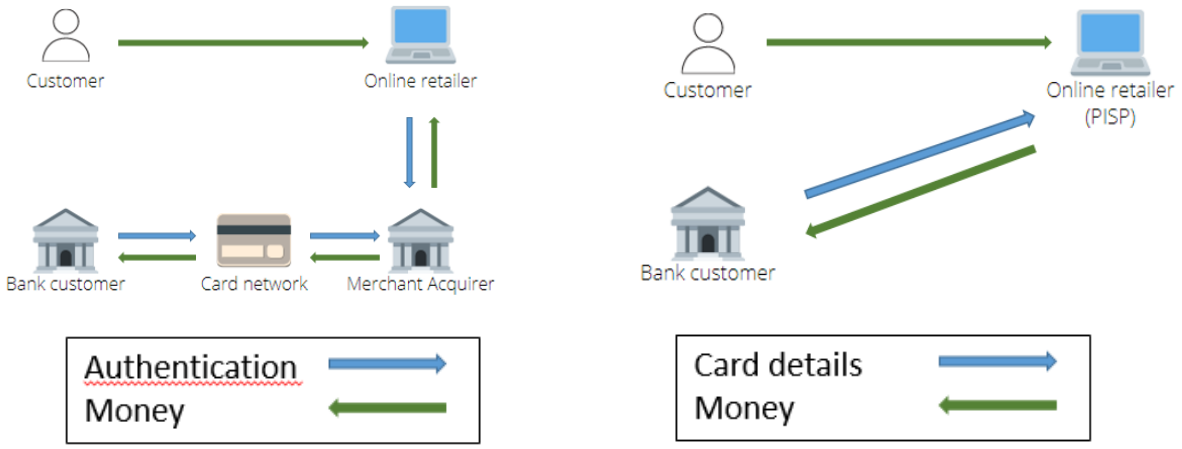


Figure X: PISP before (left panel) and after (right panel) the introduction of PSD2

Furthermore, PSD2 is supplemented by the Commission Delegated Regulation (2018/389). In Article 98, the European Commission passes the responsibility to develop RTS for strong customer authentication (SCA) and secure communication to the European Banking Authority (EBA). It seeks to address the security risks that were previously not covered with PSD1. A transitional period has been foreseen for PSPs to implement these standards. This period ended on 14 September 2019, but, due to its complexity, the EBA extended the deadline to 31 December 2020 for PSPs who missed the first deadline (European Banking Authority, 2019).

The RTS don't specify an European-wide API standard and strive for technology-neutrality. Regulations that leave freedom to create new products, processes or technology due to compliance decrease the tendency to postpone or avoid regulatory change (Freij, 2017). On the flip side, this freedom has resulted in some fragmentation in the market. Different banks have developed different API standards. As a consequence, PSPs have to deal with this various range of communication interfaces, each with slightly different specifications, and this can slow down innovation of their services (Pulkiewicz, 2020). Over the past few years, two

different initiatives that aim to resolve this issue have emerged. On the one hand, API aggregators (also called an API Hubs) solve the inconvenience of having to connect with dozens of APIs that were introduced throughout the member states. These solutions bundle a wide range of APIs from different providers. Ibanity for example is a Belgian API aggregation company that connects to the APIs of – at the moment of writing – 47 APIs through one single API. They target smaller banks and third party players that don't have the resources to build connections with the existing APIs, but also major banks can benefit from this solution. It is a kind of a distribution centre that connects to other banks. The bank or TPP has to integrate only one party, so that they don't have to integrate with all the specific banks, adding a level of abstraction to the developers of the party that uses this hub. On the other hand, financial institutions, TPPs and other organizations that are involved in PSD2 discuss about API standardization initiatives that are used by banks for the implementation of PSD2 in their organization. There are multiple standards across Europe and some of them are mostly being used in a single member state (e.g. STET and Polish API in France and Poland respectively), whereas others are used across the whole continent (e.g. NextGenPSD2 by the Berlin Group). These initiatives aim to reduce the level of fragmentation in the payment services market, but can't remove it completely, as there will be quality differences in the data provided by different banks. Market forces should however improve the quality of data and foster innovation, otherwise the low-quality data banks run the risk of its data simply not being used. Furthermore, even if two banks use the same standard, there will still be small differences in the implementation due to the broad interpretability of the directive. This also leads to higher fragmentation of the API landscape.

3.2.2 Operationalization of PSD2 in Belgium

PSD2 had to be transposed into national law by 13 January 2018 by all member states. In Belgium however, conversion took place on 9 August 2018 and was incorporated into Book VII of the Economic Law Code.

The directive is based on the principle of full harmonization, which means that national legislators had little freedom of choice. Article 107 states the following:

> *"Without prejudice to Article 2, ..., Article 63(2) and (3), the second subparagraph of Article 74(1) and Article 86, insofar as this Directive contains harmonized provisions, Member States shall not maintain or introduce provisions other than those laid down in this Directive."*

This means that member states cannot add additional laws in their domestic legislation. Note that although the PSD2 regulation is only binding on European Union member states, EU

candidates, such as North Macedonia, are also experimenting with similar legislations. These countries are, however, following a modified path and are expected to align with the EU at their own pace since some of them still rely a lot on traditional banking (Petrevska Nechkoska, Trajkovski, & Kostoska, 2019).

The National Bank of Belgium (NBB) is the local supervisor and is responsible for monitoring the RTS and for granting licences to third parties (National Bank of Belgium, 2018). Companies that wish to obtain access to customer data can apply to the supervisor and are extensively reviewed during a time span of three to twelve months to ensure data security and prevent data breaches. The accredited companies of all member states are listed on the 'Register of payment and electronic money institutions under PSD2' of the EBA (European Banking Authority, 2018).

At the moment of writing, there are 9 registered PISPs and AISPs in Belgium:

Payment Initiation Service Providers	**Account Information Service Providers**
Bonsai	Bonsai
Cake	Cake
Digiteal	Digiteal
iBanFirst	iBanFirst
Isabel Group	Isabel Group
Let's Didid	Let's Didid
Together Connected	Together Connected
Unifiedpost Payments	Unifiedpost Payments
Worldline	Worldline

3.3 Strategic decision-making due to regulatory change

With PSD2, the institutional environment (i.e. the European Union) aims to tip the balance in new challengers' favour. Opening up the access to customer data opens the gates for FinTech to new business models. This in turn can hurt the profitability of banks. Due to payments representing 14% of total banking revenues in 2020 (Staples & Keane, 2020), and due to the current low interest environment where banks are obliged to shift more and more to non-interest fee income, the stakes are high for banks. During its entire existence, the banking industry had the monopoly on transaction and account balance data, PSD2 will change this. The adoption of the regulation will not only have an impact on its payment operations, but has the potential to disrupt its position in the value chain (Guibaud, 2015; Cortet, Rijks, & Nijland, 2016). PSD2 may cause customers to communicate less via the

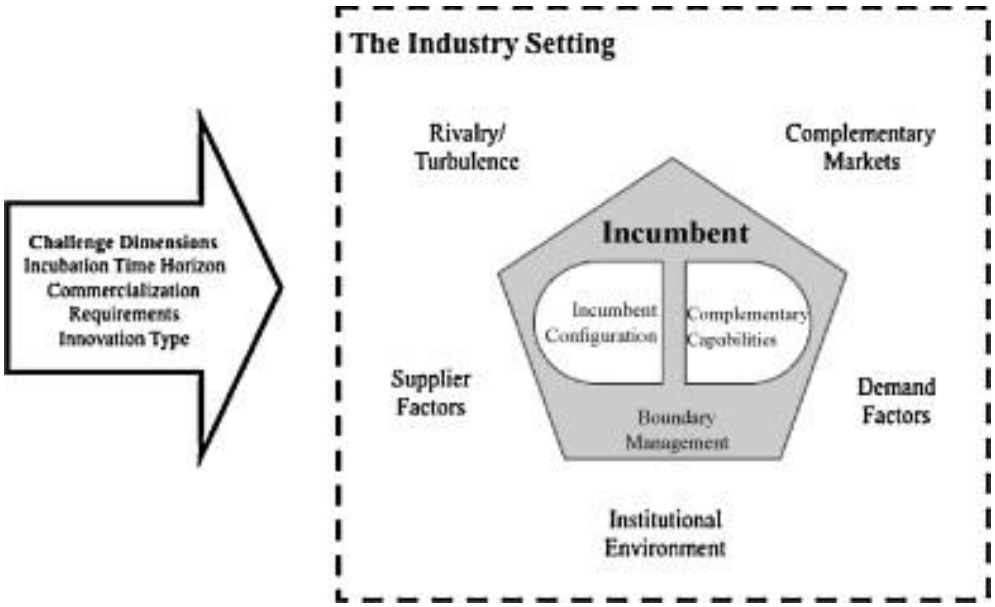
banks' platforms. Instead, the XS2A rule will allow customers to conduct their financial affairs through a TPP's platform and risk disintermediating banks (Dietz, Härle, & Khanna, 2016). This disintermediation will lead to the reduction of costly customer touchpoints and hamper banks' cross-selling. PSD2 is not just another regulation: banks have several strategic options to do more than merely complying and to combat disintermediation. This chapter will draw on the strategic decision-making process in the context of regulatory change in general, and PSD2 more specifically.

Decision-making was a well-discussed topic in the last century. Chester Barnard, often seen as the pioneer of this field, introduced the term "decision-making" to the world of business. He conceptualised the decision-making process, which previously relied mainly on the intuition of managers. Barnard (1938) makes a distinction between personal decision-making and organizational decision-making. The former refers to decisions that are taken outside the organization. The latter concerns decisions that aim to move the organization towards its organizational goals. Organizational decision-making is based on logical analysis, as well as intuition in the absence of a complete set of data (Barnard, 1938). Simon (1947) argues that decision-making is based purely on logical analysis and identifies four phases in the decision-making process: intelligence, design, choice and implementation. In the intelligence phase, the decision-maker examines the reality and identifies weaknesses and opportunities. The design phase involves the development of a system that sets the context of the decision and performs a simulation for each alternative. The actual decision happens in the ‘choice phase’. Finally, the chosen alternative is implemented in the ‘implementation phase’ (Barnard, 1938).

Barnard and Simon disrupted the perspective of managers on what they do. As a result, multiple models and frameworks were introduced to conceptualize different aspects of the decision-making process, including the impact of regulatory change. Research on strategic opportunities provoked by regulatory change is limited. Instead, most literature is focussed on how companies can minimize, or even better, avoid the impact of regulations on their operations (Freij, 2017). When new regulations are adopted, organizations that are affected by this specific regulation are imposed to redefine the requirements of products, processes or technologies, and this involves both threats and opportunities for an organization. Companies that understand how to implement these new requirements end up with a comparative advantage over their competitors in the industry (Freij, 2017).

Regulations that aim to intensify the competition in the industry, such as PSD2, challenges the incumbents and therefore has the possibility to disrupt the market. Sometimes

incumbents survive these challenges, but examples where incumbents suffer and are (completely) displaced by challengers are also numerous. Ansari and Krop (2012) identify three factors that can influence the incumbent-challenger rivalries concurrently: industry characteristics, incumbent firm properties and the challenge itself, which can be found in Figure X. They combine organizational theories with management theories at the industry and institutional level (Ansari & Krop, 2012). This framework can help us to identify certain factors that may influence impact incumbent survival in the context of PSD2 and the innovations that follow.



Out of all these factors proposed by Ansari and Krop (2012), we will discuss the three that are most distinct in the payments industry: rivalry/turbulence, incubation time horizon and demand factors. The first factor represents the level of competition in the payments industry before PSD2 was introduced. Even though the density of the FinTech network has increased a lot over the past decade, the competition of this modern industry is not new to the banking industry. Payment institutions, which can be considered the 'early FinTech', had already been introduced by PSD1 (Cortet, Rijks, & Nijland, 2016). This relatively strong rivalry may play into the favour of banks, because it prepares them for change in the industry. Industries where the rivalry has been low for a certain amount of time can make companies inert to market change. Experience with industry turbulence may 'reset' the inertia (Ansari & Krop, 2012). Another factor that may influence the battle between challengers and incumbents is the incubation time horizon, which Ansari and Krop (2012) describe as "the period between incumbents' awareness of the innovation and its profitable commercialization". They conclude that the longer this period, the higher the chances of incumbent survival. What is long and what is short is hard to distinguish and depends on the industry. Literature however claims that PSD2 is a quite complex and slow process (Pulkiewicz, 2020). At first instance, it

took a while before the final RTS were published by the EBA. Banks, however, already had some indications on what the regulation intended to achieve. As previously discussed, a proactive approach was recommended to benefit from first-mover advantages. This bought them time to adapt to this change. After the publication, the EBA still tinkered with the specifications of the RTS through the release of multiple opinion papers, making it difficult for TPPs to develop products and services. These opinion papers extended the timeframe further. Research also concluded that PSD2 didn't cause the effects that the legislators hoped it would bring yet, which should play in favour of the banks. This slow start is also noticeable in Belgium, where the market is "conservative with very stable market shares for the banks" (Standaert, Muylle, & Cumps, 2020). The last statement also applies to the third variable: demand factors. This variable refers to whether or not consumers are inert in the industry. When customers make frequent, low-cost purchases, they will be less inclined to switch producers if a substitute good comes onto the market (Ansari & Krop, 2012). As a result, the three factors we discussed are positive for banks. Therefore, the incumbents have a good chance of remaining market leaders in the payments industry, if they are able to prepare their organisation in time.

Financial institutions that recognize strategic opportunities in the light of PSD2 regulation received some attention from academics and industry experts. Cortet, Rijks and Nijland (2016) share the same view of both the dangers and strategic opportunities presented by PSD2. The increasing activity of innovative non-bank PSPs in Europe, the increasing complexity of financial regulations and the change in consumer behaviour are creating a 'perfect storm' for traditional banks. By capitalising on these three trends, PSD2 puts additional pressure on the banking industry. To cope with PSD2 and XS2A, banks need to ask themselves two fundamental questions, according to Cortet, Rijks and Nijland (2016). The first question is related to the positioning in the payments value chain. Do banks focus solely on providing access to TPPs and let those TPPs develop PIS and AIS on top of the bank's infrastructure, or do banks offer these services to their customers themselves? This strategic decision defines the bank's position in the battle for customer relevance. The second question is related to the breadth of the service portfolio. Does the bank limit itself to the services that fall within the scope of PSD2 (PIS and AIS), or do they extend this to services that go beyond payments? These two questions divide the strategic decision-making in the context of PSD2 into a matrix of four generic strategies: comply, compete, expand and transform. These strategic options are not mutually exclusive which means that banks can go from one strategic direction to another over time (Cortet, Rijks, & Nijland, 2016). The matrix can be found in Figure X. As stated earlier, this framework will form a

basis for the interviews and the result analysis. The four options are explained in detail in the next chapter.

Berghuijs, Koetsier and Veenman (2017) distinguish three ‘PSD2 strategies’ in the Dutch banking industry: Comply, Compete and Innovate. Analogous to the framework of Cortet, Rijks and Nijland (2016), the ‘Comply’ strategy implies that the bank only does what is required by the PSD2 regulation. They don’t leverage PSD2 to compete in the payments industry with other PSPs. ‘Compete’ involves defining a strategy to defend their customer relevance and visibility against other players. Banks that follow the ‘Compete’ strategy have to make some adjustments to their business model, but it doesn’t require them to transform their organisational design. Finally, ‘Innovate’ is an aggresive strategy that looks beyond PSD2. Banks have a strategy that recognizes the bigger trend towards Open Banking and re-align their business model and technology capabilities with this trend. This strategy transforms the company into an agile organisation, and can therefore be seen as a combination of the ‘Expand’ and ‘Transform’ strategy of the Cortet, Rijks and Nijland (2016) framework..

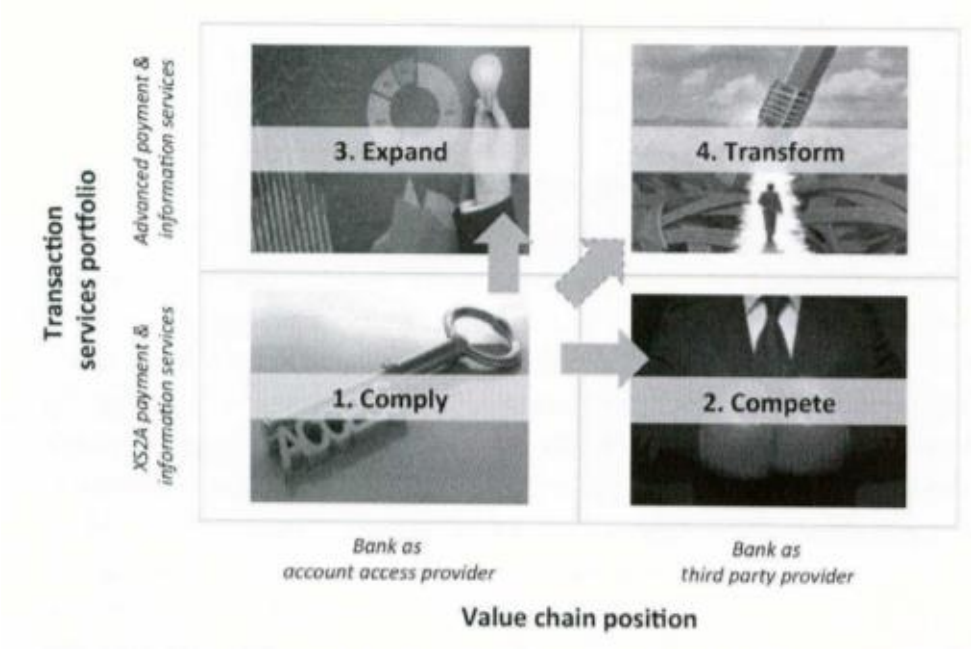
3.4 Analytical framework: four generic strategies to cope with PSD2

In order to make it possible to structure the results and interview, this chapter tries to get a better understanding of the theory. A framework will help us answer the research question and discover what strategic choices banks are making to deal with PSD2. We will use an existing framework in this field to assess the results of our study. Are the findings of the interviews in line with related work, or do we break with existing literature and find something new?

In the previous chapter we discussed various theories that are related to strategic decision-making, each with its own strengths. The framework of Ansari and Krop (2012) provides a generic, industry-neutral description of incumbent-challenger dynamics that may influence this rivalry. With the XS2A rule of PSD2 requiring banks to share transaction data of their account-holders, TPPs get more freedom to develop cutting-edge services that meet customer demand. While some of these incumbent-challenger dynamics are very pronounced in the PSD2 example and the theory can reveal the potential pain points for banks, it does not propose concrete action plans. The frameworks of (1) Cortet, Rijks and Nijland (2016); (2) Berghuijs, Koetsier and Veenman (2017); and (3) Guibaud (2015) all have in common that they advocate for strategic approaches that look beyond PSD2. They are convinced that banks will benefit more from PSD2 by adopting an open and digital strategy,

meaning that they also share non-payment data and engage in strategic partnerships with both TPPs and other banks. As such, they are closely related to the aim of this thesis.

The framework of Cortet, Rijks and Nijland (2016) identifies four strategies to cope with PSD2: Comply, Compete, Expand and Transform. Each strategy involves certain implications for a bank, which makes it different from the Berghuijs, Koetsier and Veenman (2017). Furthermore, the former framework is based on independent research and will therefore form the basis of our research. For the remainder of the thesis, the first framework will be used as a foundation for the interviews and analysis. The other theories will be used to reinforce or challenge the results.



3.4.1 Comply

The first strategy is simply complying with the PSD2 regulation, which means that the banks open up their APIs to the most limited extent possible to be compliant with the RTS, specified by the EBA. Nevertheless, this limited access of APIs will still enable TPPs to perform AIS and PIS. The big challenge of PSD2 for banks is to determine how they will grant access to TPPs. They have to decide which standard they are using as a basis for the APIs and how they integrate the interfaces in their back-end systems (Guibaud, 2015). Banks that choose the Comply option will disappear behind a wall of TPPs in the long term and will lose customer contact regarding both payment and non-payment services (Guibaud, 2015). As a result, these banks will have to reassess their position in the value chain (Cortet, Rijks, & Nijland, 2016).

Compliance itself has been a great challenge to banks for many reasons, according to Vaerendonck, Process Manager at KBC. Next to the new resources and capabilities – e.g. knowledge of the interface description language 'Swagger' – that implementation required, the big problem with APIs was that the regulator had not set a market-wide implementation standard. The choice for technology-neutrality formed a big challenge for the banks initially. The regulator left a lot of room for interpretation: even if two banks would follow the prescriptions to the letter, those banks would come up with a different solution (Pulkiewicz, 2020). Additionally, issues with the timeframe of PSD2 were mentioned. Banks had to be compliant with PSD2 as of 13 January 2018, but the final RTS were only finalised on 18 March 2018 and banks had to comply with these RTS 18 months later (14 September 2019). Banks could either adopt a wait-and-see approach for the RTS implementation and observe movements in the market; or they could start from assumptions on the RTS and proactively start to develop a solution to benefit from first-mover advantages (Eroglu, McFarlane, & Hommel, 2018). Setting up safe and secure APIs and integrating them in the back-end systems was, and still is, a big challenge for the banking industry (Guibaud, 2015).

When taking all these implementation issues into account, choosing to simply comply becomes an understandable choice for a bank to make. This could save a significant amount of time and money, but could create a competitive disadvantage in the long run (Cortet, Rijks, & Nijland, 2016; Guibaud, 2015). If a bank chooses to simply comply, they run the risk to lose customer relevance. PSD2 aims to increase innovation in the financial services. Conservative banks that refuse to follow this trend of innovation are in danger of being pushed into the background. This is called 'the invisible bank' (Berghuijs, Koetsier, & Veenman, 2017). In the long run, more and more customer-friendly banking products and services will emerge from other banks' or TPP platforms. The conservative bank will lose

some key customer touchpoints and play the supplier role, performing more back-end processes, like transaction settlements or managing customer accounts (Berghuijs, Koetsier, & Veenman, 2017). Banks recognize this threat, but more importantly: they see PSD2 also as an opportunity (Maus & Mannberg, 2019; Berghuijs, Koetsier, & Veenman, 2017). The comply strategy costs the least in terms of IT investment, but it also means missing out on opportunities (Guibaud, 2015). The next three strategies embrace these opportunities, each to a different extent. These strategies also require the bank to be PSD2 compliant.

3.4.2 Compete

We can also consider the perspective whereby banks have to provide access to payments data to external parties in the opposite way. Banks themselves can also gain access to their competitors. As a result, PSD2 also enables ASPSPs to develop new products and services themselves. Banks that decide to offer front-end payment initiation and/or account information services can be classified in the Compete alternative (Cortet, Rijks, & Nijland, 2016). The former service builds a secure bridge between payer and payee. PISPs can directly initiate a payment from the payee's account through a dedicated API. AIS aggregate the account information of an individual's bank accounts. These services offer new business opportunities for existing FinTech and new entrants, but also for banks, since they don't require an additional licence for banks. By offering PIS and AIS to their and other bank's customers, they adopt an offensive strategy and compete for customer relevance and visibility (Guibaud, 2015).

Banks will have to compete with PIS providers such as SOFORT and Trustly, as well as Moven and Mint in the AIS segment. In Belgium, Cake is growing at a fast pace and tries to become the reference.

3.4.3 Expand

The third strategy looks beyond simple account information and payment initiation services and focuses on increasing the breadth of the payment services portfolio (Cortet, Rijks, & Nijland, 2016). If they are able to develop more advanced functionalities, this creates opportunities for new revenue streams. Examples of ‘products and services that go beyond PSD2’ mentioned by Cortet, Rijks and Nijland (2016) are creditworthiness verification, real-time financial advice and digital identity services, but the opportunities are unlimited.

Guibaud (2015) argues that banks should get involved in the debate on customer relevance. Banks should do more than merely complying and explore opportunities to create new revenue streams if they want to stay relevant to the customers. A better option would be to expand their service offering beyond AIS and PIS, and monetise them. These can be banking services, but XS2A also enables them to provide services from TPPs by engaging into collaborations and strategic partnerships (Guibaud, 2015). Even though entrants may benefit from collaborative partnerships with established players in the short term, this effect stagnates over time. On the other hand, the incumbents have the greatest benefit from these alliances in the long term (Singh & Mitchell, 2005). Banks that react to the dangers of the strengthened position of TPPs, as well as leverage the PSD2 regulation to generate a new profit pool for the company have a competitive advantage over their peers.

PSD2 is an opportunity for banks to present themselves as an 'ambidextrous company'. This is an organisation that does what it does best, namely its core business, but is also constantly looking for opportunities to ensure its future viability (O'Reilly & Tushman, 2008). While banks should keep focussing on payments, they should not be blind for market changes. PSD2 is one of those opportunities for traditional banks to differentiate themselves from the rest of the market by developing breakthrough innovations. In the past, organizations that have separate innovation units with a high degree of autonomy have established themselves as ambidextrous companies (O'Reilly & Tushman, 2004).

3.4.4 Transform

The ‘Transform’ option is a combination of the three strategies above. While banks comply to PSD2, they also decide to compete for customer relevance through basic services that are under the scope of PSD2, as well as advanced payment and information services. By leveraging the API technology in their advantage, banks that choose this strategy become strong digital players that provide innovative and customer oriented products to their clients. The better the banks are aligned with the API technology, the more they can benefit from it. According to Cortet, Rijks and Nijland (2016), this requires a strong focus on agile development and continuous improvement. In essence, companies that don’t perceive APIs as a single purpose compliance solution, but as an enabler for multiple strategic objectives create a strong competitive advantage.

The ‘Transform’ alternative will also have an impact on the organization as a whole. This strategy requires banks to review its organisational structure. Similar to other industries, they will have to shift from the traditional, rigid structure to an agile and cross-functional approach (Cortet, Rijks, & Nijland, 2016; Guibaud, 2015). Furthermore, collaboration models such as partnerships are also fundamental to this strategy. Fintechs and start-ups can provide expertise in technology and quick development, whereas banks are responsible for trust, scale and reach (Cortet, Rijks, & Nijland, 2016). However, they should be careful about the partnerships they enter into, as a mistake on the part of the partner may result in damage to their own company's image.

4. Empirical results

In this chapter, the empirics of the interviews are presented. The fourth chapter is divided in four subparagraphs, representing the four interviewed financial institution: KBC, BNP Paribas Fortis, Belfius and ING Belgium respectively. Each representative is introduced and the findings are delineated.

4.1 KBC

Erwin Nys works for KBC for over 30 years. He is product manager and policy advisor of the payments department. This department handles both card payments – debit and credit cards – and the processing of payment files for companies. Nys has been involved in the compliance of PSD2, in close collaboration with the legal department of the company, but also with the strategic part. As a product manager, he discovered ways to use the PSD2 regulations to further develop their service offering. For the past two or three years he has worked almost full-time with PSD2. Additionally, he is concerned with launching new functionalities in their mobile app.

With respect to the PSD2 project, KBC wanted to play a pioneering role. Before the RTS were finalized and published, KBC started working on their APIs. They started from assumptions to deliver both AIS and PIS. When the final RTS were published, they had to make some first adjustments because their interpretation differed from the EBA. Later on, when the opinion paper was published by the EBA, they had to make some additional adjustments. This paper states that banks legally have to grant access to all services that they offer through their own channels, including services that are rarely used and that attracts low interest from FinTechs – private cross-border money transfer for example. Nevertheless, KBC was very early with their compliance. Moreover, to implement this open infrastructure, KBC had to look for a standard, due to the fact that the EBA didn't define a specific one. KBC chose the NextGenPSD2 standard of the Berlin Group. They developed their solutions in-house, supplemented by external API aggregation packages, which were discussed in subparagraph 3.2.1. In February 2019 they were fully compliant with the initial RTS, 7 months before the deadline.

Next to the compliance program, KBC started an 'opportunities track'. They looked from the opposite perspective: if KBC has to open up their APIs, their colleagues have to do it too. In their mobile app, they added the possibility to add non-KBC current accounts. Clients can check the balances and transaction history from other accounts, as well as initiate a payment

from that other account through the KBC mobile app. In that sense, they extended their offering. Also here KBC tried to play a pioneering role. They offered PIS and AIS before the APIs were available to test if there was any demand for these services in the market. When the APIs became available, they switched to this technology.

KBC is also trying to leverage PSD2 to explore new functionalities. The company is looking how they can extend processes related to payments or non-payments that use transaction data. Two examples were mentioned. First, the bank can enhance their credit scoring process due to PSD2. With the access to data of the client's other accounts, they get a better overview of the total income and spending pattern of the client. Therefore, they don't need to ask the client for additional information, because they have all the financial data they need at their disposal. Second, KBC also want to enrich the transactions with information about the shop of the purchase for example. Doing so, they can classify each payment and give the client a detailed overview of their aggregated spending patterns over their different checking accounts and give financial advice.

The options with PSD2 are numerous. KBC has set up a separate team, called 'open banking' that actively looks for potential use cases. They build a proof of concept and test it on the market to check if it catches on. If it is a hit, they continue with the product. If it doesn't catch on, they make adjustments, or simply abort the project. Products that are approved are further developed and can be offered through one of their own channels – their mobile app for example – as well as through platforms of third party players. This is because they have two strategies: a 'be everywhere' and an 'all in one' strategy. With the 'be everywhere' strategy, KBC wants to reach out to as much people as possible. This can increase the traffic on their mobile app and increase their visibility. With the second strategy, they want to meet the requirements of the customer adequately and provide them all services just in one mobile app. They add functionalities to their app like public transport, telecom, cinema and even charity. The goal of this strategy is to build their app as a reference for banking services, but also services that individuals can use in their daily lives. The combination of these two strategies makes KBC's app very popular with a user base of over 1 million. For non-banks and FinTechs, it's interesting to offer their products in KBC's app, because of this large customer base. The final goal for the bank is to become a platform that offers a very broad set of services, such as WeChat in Asia, while also offering their own banking products.

KBC already had a lot of collaborations with third parties before PSD2 was introduced, but the directive heavily changed their collaboration models. Before the regulation, KBC made contractual agreements with TPPs. The fact that you cannot make bilateral agreements in

advance is new and very specific to PSD2. Banks now have a whole API gateway for PSD2 whereby there is no prior agreement between the bank and the other party to enter into this collaboration. PSD2 also caused a mind-set change within the company, according to Nys. The regulation has accelerated the open banking idea. The realisation has come that they used to be a relatively closed environment, especially for retail banking. They now have to disclose account information with third parties with whom they have no contractual agreement. Nys believes that the way forward is a more open ecosystem in which banks cooperate, that everyone does what their core business is – for banks this means payments, credit, insurances, etc. – and that all organizations exchange information with other commercial companies. Finally, Nys frankly stated that the step towards open banking was an unavoidable one: if it weren't for PSD2, opening their information to other parties would've happened within the scope of another project.

4.2 Belfius

The respondent of Belfius is Pieter Valcke. For 13 years, he has worked in the legal department of the bank that handles payments. Recently, he became head of non-financial risk management at Belfius Insurances. Nevertheless, Valcke has been closely involved with the implementation of PSD2 for the past years. As a legal expert, he has mainly focussed on compliance, but he is always business-oriented. He has been part of multiple strategic reflections and as such has a good view on the commercial strategies that resulted from the PSD2 rollout.

Belfius adopted a mixed approach with the implementation of PSD2 that changed over time. The bank started very quickly with the development of their solution. They wanted to fully meet the values and requirements of PSD2, without having a full picture of the content of the RTS. They started from indications, because the final picture was not yet available. The respondent claims that Belfius was the first in the Belgian market to open up their online portal and created an environment where counterparties could test their APIs directly. The developers of Belfius noticed that other large Belgian banks were rather reluctant to develop and open up their APIs. As the market was moving slower than Belfius had first estimated, their approach created a competitive disadvantage because they were already opening up their data while other banks were not. Furthermore, the regulator still tinkers a lot with the requirements of the APIs. The EBA provided guidance very late and sparsely through their opinion papers. This guidance requires adjustment of IT projects, which can only be realised after 9-12 months at each bank. Since banks operate on a quarterly basis with "release weekends" where new IT modifications or projects come into effect, there is always a delay

between the adjustments made by the EBA and their actual implementation. For these two reasons Belfius decided to slow down its development and shift to a slightly more reactive approach. A large part of the solution of Belfius was outsourced. Belfius partnered with Ibanity for an API aggregation solution. They leveraged those partnerships to enable them to quickly shift towards open APIs. On top of these partnerships, they needed in-house IT capabilities to integrate everything into their own channels. Valcke also pointed out the dangers of relying too much on external suppliers with regard to business continuity.

From the start, Belfius decided to use the open access to customer account data of their counterparts to offer AIS and PIS to their customers. As an account-holding bank, Belfius – and the other banks – had an edge over TPPs, because they already had the required licences. TPPs on the other hand had to undergo a long process before they could offer AIS and PIS. In the Belgian market, there is one player, Cake, that is trying to become the reference for these services. As such, Valcke argues that in the short term the biggest threat will come from other banks. In the long term however, he expects that the biggest competition has yet to come. Valcke refers to the BigTech companies that are considering to integrate AIS and PIS in their platforms in Europe. Alipay, for example, already has a banking licence ready in Luxembourg and Google has arranged it in Ireland.

For Belfius, PSD2 has been the trigger to look beyond their core activities. They are providing more and more products from other sectors to 1.5 million mobile app users. They integrate these products in their own channels through partnerships with De Lijn, Sodexo and Immovlan, for example. This is a first step towards their “banking as a platform” strategy. For the development of other services such as creditworthiness verification, much clarification is still needed from the legislator according to Valcke. At the European level, there are still many unanswered questions regarding the relationship between GDPR and PSD2. Belfius highly values the security of their clients’ data and tries to minimise GDPR-related risks. For that reason, the bank is waiting until the understanding between PSD2 and GDPR has become more stable. Belfius' ultimate aim is to follow the example of Alipay in China: a one-app approach whereby all services are offered through a single portal. In this respect, Belfius' strategy is to serve its clients to the maximum via its own channels. The idea behind this is that it leads to greater visibility and publicity for the bank. This allows them to better showcase their services and encourages cross-selling. Valcke believes that “banking as a platform” will become the standard on the Belgian and European market.

On the one hand, Belfius perceives PSD2 as an opportunity to develop new products that go beyond their core activities. Valcke notices more out-of-the-box thinking and that also gives

rise to more innovative ideas. The focus is not on ‘how’ they can offer their products to certain segments, but more on what partnerships they need to go a step further and provide extra value to the customers. On the other hand, the bank believes that PSD2 is a missed opportunity for the regulators. The one-sided opening of data puts banks at a competitive disadvantage compared to BigTechs and other sectors. Although Belfius strongly encourages initiatives such as PSD2, they have to conclude that the "level playing field" promised by the EBA has been distorted. Valcke fears that if open access to data is not extended to other sectors, PSD2 could threaten banks in the long term.

Belfius pursues a mixed approach to strategic partnerships. Through their strive for high-quality APIs, they position themselves as a good cooperation partner for TPPs. On top of that, Belfius’ marketing and strategic partnership teams keep a broad view not only of the Belgian market but also of the European market. If interesting collaborations are detected, they are certainly initiated. To keep up with a fast-moving market, banks need to keep an eye on the services that are being introduced to the market by other banks, but more importantly which services FinTechs and start-ups are bringing to the market. Belfius tries to detect these services in time and work out how they can integrate them rapidly into the value chain. Valcke is convinced that PSD2 can thus contribute to accelerating the digitisation process of banks. Banks will have to step up their IT efforts in order to make maximum use of new technologies such as AI and Blockchain.

4.3 BNP Paribas Fortis (BNPPF)

The respondent of BNPPF works for the open banking team of the bank, but wishes to remain anonymous. The open banking team of BPPF is engaged in generating new revenue streams together with partners around a number of clusters they want to focus on as a bank. These clusters represent how people will live, work and move in the future. Together with partners, they are looking from a business perspective at how they can generate value propositions for their customers. The respondent was also involved with the integration and implementation of PSD2.

The vaguely defined framework and the lack of detail was a difficult point for BNPPF. The legislators roughly described what had to be built, but didn’t specify it precisely. The PSD2 project team was very often in close contact with both the internal legal department and external legal agencies to try to clarify what is needed from a compliance point of view. They also participated in various information sessions at the Febelfin level, which is the representative of the Belgian financial industry. Unfortunately, the Anti-Competition Law

restricts the extent to which banks can discuss their interpretation of the RTS with competitors. Furthermore, there are many ambiguities about what is in scope of the RTS and what is not with a very broad and diverse implementation of PSD2 APIs in Europe as a result. As a subsidiary of the banking group BNP Paribas S.A., BNPPF decided to follow the group regarding the interpretation and implementation of the RTS to ensure alignment within the group. BNPPF left the initiative entirely to the parent company, which developed the API gateways mainly in-house. Being a French bank, BNP Paribas decided to adopt the domestic RTS framework, STET. The respondent ensured that having a different RTS framework from the majority of the Belgian banks doesn't pose any problems for BNPPF. The respondent explained that, even if two banks would use the same standard, there would still be differences in the implementation.

BNPPF believes that PSD2 offers them opportunities to expand their service offering. Regarding the PSD2 services, AIS and PIS, they currently only offer the former. They started the development of account aggregation services very quickly and were one of the first in the Belgian market to have that offering. BNPPF's mobile application users even had the possibility to integrate their accounts from other banks before the RTS deadline in September 2019. At the moment, BNPPF doesn't offer payment initiation. The reason for this is that there is hardly any demand for it in the market at the moment. The respondent states that there are few incoming requests for payment initiation on their API gateway, indicating low activity in that market. The respondent adds that there a few players that are experimenting with a payment initiation tool, SOFORT, but there are no major banks that are pushing PIS very strongly. The open banking team also explores service offerings that go beyond the above-mentioned services and actively searches the market for potential use cases. The respondent mentions KBC, a bank that already offers many such services, as an inspiring example that they would like to follow. BNPPF doesn't offer such services yet, but are in the middle of ideation. The respondent assures that development in this area is imminent. They are discussing with TPPs both services that they can offer to the customer through their own platform as well as services that are marketed through the TPP, depending on the specific use cases.

PSD2 has had a positive impact on the broad digitisation process of BNPPF and has made them engage in certain reflections they had not done before. However, the respondent argues that PSD2 has been more of a stepping stone towards open banking and that open banking in turn is an accelerator, rather than PSD2 itself. This broader trend of open banking, that is not limited to just payment data, will have an enormous impact in the future on the number of touch points with customers. According to the respondent, BNPPF is aware of the

possible dangers and sees two possibilities how banks can respond: react by completely closing yourself off, or react by looking for opportunities with an open mind. BNPPF has chosen for the second alternative and tries to leverage PSD2 by generating a new profit pool for the bank.

4.4 ING Belgium

Begoña Blanco Sanchez is the PSD2 expert of ING Belgium. In her role of head of payments, she is responsible for all European projects linked to payments, such as PSD2, instant payments, connection to the European Central Bank's clearing house[1], Request-to-Pay[2] and the European Payment Initiative[3]. Furthermore, Blanco Sanchez is ING Belgium's contact person regarding payments towards Febelfin. She maintains the relationship with the NBB in the context of PSD2 and is the representative for Febelfin in the European Payments Council. She was in charge of PSD1 and now leads the PSD2 project at ING Belgium.

ING Belgium is a subsidiary of the international banking group ING, which decided to deal with PSD2 at the group-level and align implementation across the twelve European entities of the group. They worked in close collaboration with the EBA – the creators of the RTS – and experts at the NBB as well as at the European Banking Federation and Febelfin. Sometimes their interpretation differed, but in general they had a fairly similar interpretation of the standards. The Dutch bank developed the API gateway in Amsterdam with similar requirements for all entities, including ING Belgium. This has advantages, but also disadvantages, because there is not much room for a local 'touch'. Despite this generic solution, ING is not fully compliant with the RTS at the moment of writing. The complexity of the RTS and the release of the new EBA opinion paper[4] in June 2020 slow down the implementation process according to the respondent. Furthermore, ING developed their compliance solution entirely in-house.

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[1] The TARGET Instant Payment Settlement is a clearing house of the ECB that was launched in November 2018. The TIPS infrastructare supports PSPs to offer real-time, 24/7 fund transfers to their private and corporate customers. At the moment, the focus is on transactions in euros, but this could be extended to other currencies such as Swedisch krona as well. (European Central Bank, 2017)

[2] Request-to-Pay is an initiative of the European Payments Council that allows a payee to request a payment from a payer. All PSPs from the SEPA countries are allowed to participate in this project. (European Payments Council, 2021)

[3] The European Payment Initiative is a project of 31 banks and 2 TPPs to further integrate the European Payments market. It leverages instant payments and aims to compete with card networks such as Visa and Mastercard to become the standard for European payments. (European Payments Initiative, 2020)

[4] The EBA opinion paper published in June 2020 asks ASPSPs to remove obstacles that were identified in the PSD2 APIs. These obstacles are discomforts that affect the customer experience. The EBA is counting on the so-called Competent Authorities to enforce compliance. (European Banking Authority, 2020)

In terms of PIS and AIS, ING missed an opportunity, because these services are not yet integrated in their product offering for private individuals. Instead, ING decided to prioritize an internal project called ‘Unite’ which aims to build robust channels allowing a broader range of digital products and improved performance and availability. Blanco Sanchez admits that this puts ING behind the competing major banks in the Belgian as well as the Dutch market. Competitors cleverly used advertising for their PIS and AIS services. In the beginning, this led to a lot of publicity and curiosity among customers, but more recently this interest seems to be stabilising. It is now up to ING to build on the 'Unite' project with the enhanced channels as a basis and also develop these services to catch up and eventually evolve towards an ‘Open Bank’. In the business segment, ING Belgium partners with Isabel NV, the Belgian FinTech of which ING is a shareholder, for AIS.

Despite this slow start due to the complexity of compliance, Blanco Sanchez sees many opportunities for ING. Currently, competing banks and non-banks, such as Cake, often offer simple account aggregation and payment initiation services. The respondent expects that when all banks become fully compliant and customers get further educated on the account aggregation services, there will be higher activity in the market with more advanced services. She believes that API technology can provide many opportunities to go beyond PSD2 and become a kind of APIs store where customers not only perform their bank activities, but also services that can support them in their daily lives. Today, for example, ING already offers 'Instant Loan' and ‘Instant Mortgage’ which builds on the bank's instant payments developments. They also offer transport services and a discount scheme in dozens of stores called 'Orange Deals' through their mobile app. ING also integrates APIs in other departments than payments to develop value-added services based on this technology through what they call ‘the APIs+ project’. Thanks to PSD2, ING can enter into more partnerships with FinTechs to make it possible to improve and expand their service offerings. These partnerships are a good mix between the technological expertise of FinTechs and ING’s knowledge of financial products that makes both parties dependent on each other. ING also attempts to connect with FinTechs to receive feedback on their APIs with the aim to improve them, or remove certain products with high costs and low customer interest. The end goal is to establish a platform that offers both bank and non-bank services. A first step in this direction for the bank would be to allow TPPs to offer their services in the ING environment.

Since the publication of PSD2, ING treated the regulation from a positive perspective, according to Blanco Sanchez. The updated directive increases competition, but also fosters

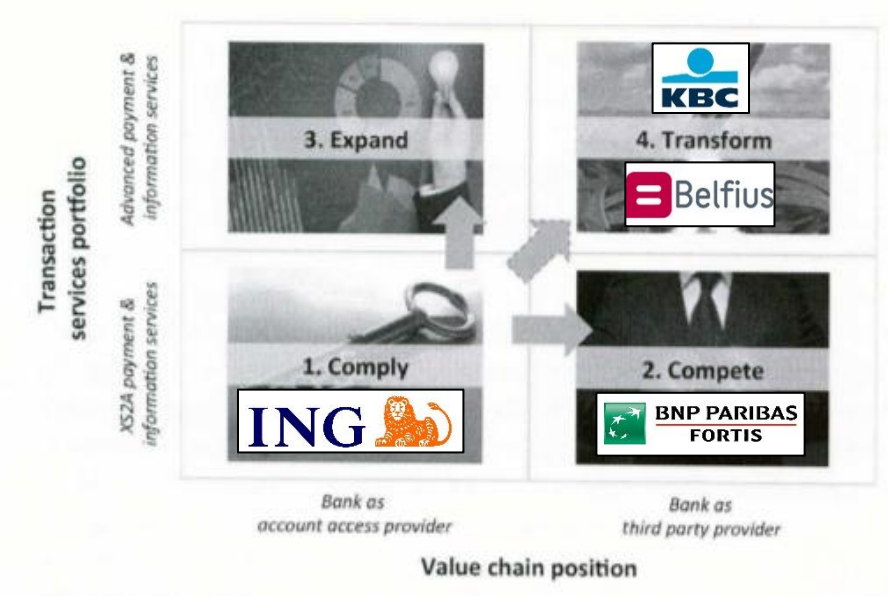
innovation, especially for major banks with slow and heavy structures. Additionally, PSD2 enhances the integration of TPPs in the payments landscape. Before, unregulated TPPs could interfere with a bank's systems, but now banks and non-banks are on the same level, which caused a big mind-set change within ING and a stronger focus on digitalisation. ING Belgium is well aware of the need to rethink banking and to fully embrace innovation to realise the full potential of PSD2 and even beyond with Open Banking.

4.5 Summary of the results

KBC	Offer both PIS and AIS
	Advanced transaction and information products (own and partner) provided through online channels
	Offer products through TPP channels
	Banking as a platform strategy
Belfius	Offer both PIS and AIS
	Advanced transaction and information products (own and partner) provided through online channels
	Banking as a platform strategy
BNPPF	Only AIS in their current product offering
	Partnerships with TPPs in ideation stage
	Offer products through the platform of external partners (future)
	Banking as a platform strategy
ING Belgium	Offer no PIS nor AIS
	External partners' products provided through digital channels
	Integrate the API technology also in non-payments departments of the bank through the APIs+ project
	Banking as a platform strategy

5. Discussion and analysis

Based on our interviews, we can classify each major Belgian bank within the framework. The result can be found in Figure XX. In the following paragraph we will discuss this classification. Note that only implemented strategies are considered in this analysis. Banks that have the aspiration to shift from the current quadrant to another are cited, but are assessed on the basis of the present situation.



5.1 Comply

Multiple academic sources (Cortet, Rijks, & Nijland, 2016; Dietz, Härle, & Khanna, 2016; Guibaud, 2015) point out the importance of a proactive approach regarding compliance. The legislator imposed a broad framework without much detail on the banks, forcing them to wait for a certain amount of time for the full picture. Banks that took advantage of the timeframe between publication of PSD2 and the finalization of the RTS on the 27th of November 2017 gained an edge over competitors that adopt a wait-and-see approach. They could do so by making assumptions on the RTS and start developing their API gateways based on these assumptions. The interviewed banks all worked in a very similar way for the compliance part in the sense that they all adopted a proactive approach. The major banks of the Belgian market all took their responsibility of leading the industry towards compliance by experimenting with the standards. The four interviewed banks took advantage of their scale by consulting their internal compliance departments to gain better insights into regulation. In addition, they also contacted external experts in the form of the EBA and NBB, as well as

consulting firms and, to a limited extent, competitors through the inter-bank community Febelfin. Thanks to this broad expert base, the four banks were able to get a clear understanding of the guidelines. The respondents indicated that their thinking was very much in line with the EBA's intentions. All banks therefore quickly chose to become compliant by using the API technology and open the access to the APIs for licensed TPPs. The small differences that still existed between the assumptions and the final RTS were resolved by all banks before the 19 September 2019 deadline.

There are however small differences in the compliance process of the studied banks. First, the origin of the solution did differ from bank to bank in terms of whether it was developed in-house or outsourced. Valcke, Belfius' respondent, emphasises that in-house IT capabilities are also needed to integrate everything into their systems and channels. Outsourcing the project (partially) increases the speed to market, but relying too much on external partners can also have serious consequences for business continuity. KBC and Belfius, for example, have chosen to complement their in-house solutions with an API hub, which makes it easier to connect to other APIs. ING Belgium and BNPPF say they have not used these external packages yet and have developed everything in-house. Second, the latter two banks also have an additional implication in that they are part of a multinational banking group. Both banks have decided to leave the initiative at the level of the group. This helps the banking groups to form an alignment across the various entities. A side-effect of this approach is that it doesn't leave much room for local 'touches'. Since banking culture may vary across the entities in the group, it is recommended to adjust the solutions to the specific needs of the market of that specific country. Blanco Sanchez, ING's respondent, gives the example that financial products are more complex in Belgium than in the Netherlands, so both countries require a specific approach.

5.2 Compete

The compete strategy has some similarities with the previous one in the sense that opening up for payment initiation and account information is a minimum requirement. This strategy, however, goes beyond compliance. Banks can offset their investments in compliance by offering payment initiation and account information services directly. This is an aggressive strategy that aims to compete for customer relevance and visibility.

With this strategy, we can already see some differences between the banks. KBC and Belfius are the only banks that integrated both AIS and PIS in their product offering. Mobile app users of these banks can view and initiate payments from their current accounts at other

banks. At the moment of writing, BNPPF added AIS to their services, but don't offer PIS. This is a deliberate choice because they have noticed that there is currently too little demand for PIS. For them, the investment in this service does not outweigh the value it brings to their customers. KBC and Belfius, on the other hand, are trying to make their service offerings as comprehensive as possible to meet all customer requirements. Finally, ING Belgium offers neither PIS nor AIS. They have chosen to prioritise their 'Unite' project, where they are trying to build strong channels and expand their digital product offering. However, the plan is to eventually start offering PIS and AIS as well. ING Belgium does have AIS in its business segment, but this service existed before PSD2. So this is nothing new and we will not consider AIS for businesses for this analysis.

Now that we have an overview of the PIS and AIS that are provided by the leading Belgian banks, a more interesting insight would be how competition for these services is going to play out. KBC and Belfius clearly have some first-mover advantages over the other Belgian banks. They advertised their services well and this led to a lot of publicity for these banks. Blanco Sanchez, for example, states that they saw a high activity in this market in the beginning, but that it now has stagnated. As PSD2 now also regulates non-banks, they have to compete with TPPs. Several respondents cited Cake as the biggest Belgian competitor in this category, but, since PSD2 harmonizes the European payments services market, Belgian banks also have to keep an eye on other European countries. SOFORT, Trustly, Moven and Mint were already mentioned as candidates, but competition from BigTech companies is also lurking. Valcke refers to Alipay and Google who have already secured a licence in Europe. Blanco Sanchez adds that the younger generations care less about the brand of their bank. If BigTech companies offer better services, they will easily switch to these companies.

Some non-bank players have settled as PISPs and AISPs in the payments landscape and probably will gain more and more customer interest with innovative products and services that are built on top of the infrastructure of account-servicing banks (Guibaud, 2015). Despite this competition, research (O'Hagan, McFarlan, Light, Berg, & Agarwal, 2016) reveals that consumers trust companies they associate with payments (i.e. traditional banks) the most as their PISP, followed by online retailers and FinTech. For consumers, security is the most important factor in determining their preferred PISP. Even as AISP, they prefer banks rather than new entrants (O'Hagan, McFarlan, Light, Berg, & Agarwal, 2016). It is probably too early to say how the competition on these two services will evolve. What is certain is that Belgium's leading banks are a step ahead because, according to consumers, they are the most trustworthy players. Furthermore, banks do not have to go through a licensing process because they already have the most demanding licences. Some banks realised this and

have seized these opportunities. However, they should take into account that the newer generations of consumers care less about this 'trust' and may switch to another AISP or PISP more easily (O'Hagan, McFarlan, Light, Berg, & Agarwal, 2016). The fact that competition can now also come from abroad can pose a threat to these banks too.

Another advantage for traditional banks over smaller competitors, like FinTechs or challenger banks, is that they have scale (Ansari & Krop, 2012). When the revenues of small players increase, these organisations need access to complementary resources, such as distribution channels and marketing (Cohen & Levinthal, 1990). FinTechs, in turn, can provide banks with more innovative and cheaper products and services that can be brought to the market more quickly. Traditional banks are often seen as sluggish infrastructures that take a long time to approve new projects and authorise funds. There are several banks already experimenting with small autonomous teams, such as Goldman Sachs (Dietz, Härle, & Khanna, 2016), to overcome these limitations and get projects up and running faster. Another option is to enter into partnerships with FinTechs, as several respondents pointed out. Investing in or buying out start-ups is also a possibility. For example, the four interviewed banks have a 25% stake in FinTech Isabel NV, which was mentioned earlier.

5.3 Expand

The expand alternative also requires PSD2 compliance, but also focusses on advanced payment and non-payment services that are not under the scope of PSD2 (Cortet, Rijks, & Nijland, 2016). With more and more entrants competing in this market, traditional banks may lose the privilege of being the customer's primary interface (Guibaud, 2015). In order to stay relevant for the customers as well as generate new profit pools, banks can decide to open up more APIs than required by PSD2 and become a 'bank as a platform'. Furthermore, banks can opt to offer TPP products and services, which are built on the banking infrastructure, through their digital channels. Note that this strategic option can be combined with the PIS and AIS opportunities that were described in the previous subparagraph, but this is considered as the 'Transform' strategy. In essence, banks are trying to offer a comprehensive range of services so that customers can go there not only for banking, but also for products that are useful in everyday life.

All respondents agree that PSD2 offers many opportunities, but some banks are further advanced than others in their development. Even though all banks have established an 'Open Banking' unit in their organisation and are actively exploring the opportunities, we can say that KBC is at the forefront of these developments. Even though, KBC already had

engaged in a lot of collaborations with TPPs before PSD2 was introduced, Nys believes that the project has been an accelerator for these partnerships. Their Open Banking team scouts the market for potential use cases, builds proof of concepts with limited investments and pursues opportunities if they are approved by the market. Doing so, KBC mobile app users can now benefit from an extensive product and service offering. Next to financial products from external parties, such as Payconiq and Apple Pay, they also offer non-financial products, including mobility, leisure, telecom, energy, administration and even charity. This is what they call the ‘all in one’ strategy. KBC also leverages the access to transaction data to improve existing internal processes, such as credit scoring, resulting in more added-value for the customer. Cortet, Rijks and Nijland (2016) use the metaphor of transaction information as Lego blocks that are constantly being connected in new ways, resulting in new products.

Besides KBC, Belfius is also trying to take advantage of PSD2 by integrating other functionalities alongside PIS and AIS, albeit to a slightly more limited extent than KBC currently. For instance, they are already working with mobility, real estate and pension services partners. In addition, for services such as creditworthiness verification, the legal framework needs to become more stable, according to Belfius' respondent. More specifically, because of the vague understanding between GDPR and PSD2, Belfius does not want to take any risk related to data security and is waiting for clarity from the legislator before they can start working on such services. They also aim for the 'banking as a platform' model in order to be able to serve their customers as much as possible through their own channels.

ING Belgium and BNPPF have both indicated that they would like to follow the example of KBC and Belfius, but for various reasons have not yet managed to do so. Although ING Belgium already offers some services from external partners, ING's representative indicated that the bank has not yet realised the full potential of PSD2. The reason for that is that the bank did not consider its channels ready for these opportunities. In recent years, senior management has invested a lot in innovation and technology through their so-called ‘Unite’ project. At the moment FinTechs are analysing ING's open APIs to provide feedback on their products and processes. Finally, BNPPF also has an Open Banking team responsible for maintaining relationships with TPPs. Currently, the bank does not offer such services, but they are in the middle of ideation. The difference here is that BNPPF, like KBC, is looking to integrate TPPs services into its own channels as well as its own services into the channels of external parties, while ING and want to focus first on incorporating TPPs services into its own channels.

To summarize, all banks are positive about the opportunities presented by the 'Expand' option. It remains to be seen how banks such as ING Belgium and BNPPF will implement this strategy. Banking as a platform, which goes beyond banking products and services, seems to become the standard. Will banks move towards the Alipay model where one app will influence a large part of the consumer's life? It is hard to predict how the competition will evolve, but what is clear is that there are still many opportunities.

5.4 Transform

The ‘Transform’ strategy is a combination of the three previous alternatives (Cortet, Rijks, & Nijland, 2016). Next to compliance, banks offer AIS and PIS that are compelled by PSD2 as well as services that go beyond simple account information and payment initiation. Doing so, they become a multi-sided digital platform that provide both their own products and TPP products that are built on the API infrastructure of the bank (Cortet, Rijks, & Nijland, 2016). This will change the bank’s business models and impact multiple aspects of the company, such as their channels, business processes, corporate culture and structure (Berghuijs, Koetsier, & Veenman, 2017).

The interviewed banks indicated that they are aware that PSD2 has put an end to the closed environment in which they previously operated. Partnerships with external parties are becoming increasingly important. The respondents therefore indicated that they are positioning themselves as attractive cooperation partners. For example, they try to deliver high-quality APIs, but also ask TPPs for feedback about their portals and improve them accordingly. KBC also indicated that the way of collaborating has changed significantly. Where they used to have a lot of control over these collaborations by entering into contractual agreements, a TPP can now choose to enter into a collaboration directly via the API gateway. Guibaud (2015) mentions that both banks and TPPs can benefit from partnerships. The amount of collaborations is therefore likely to further increase in the future.

Cortet, Rijks and Nijland (2016) mention that besides changing business models and processes the transform strategy also involves a shift in corporate culture and behaviour. Belfius claims that PSD2 led to more out-of-the box reasoning within the company and a more customer-centric approach, always looking for ways to offer value to the client. For BNPPF, PSD2 has been a trigger to rethink how they do banking. The project has allowed them to do certain reflections that they previously did not do. They do however state that PSD2 itself hasn’t been the trigger for this, but rather the broader trend towards open banking. In terms of organisational structure, we do not yet see any major shifts, but all

banks have established an open banking team that is responsible for managing the open ecosystem.

All banks agree that PSD2 has accelerated the digitisation process of the banks, be it directly or indirectly. PSD2 is a stepping stone towards open banking for the interviewed banks. ING indicates that, thanks to PSD2, they have discovered the many possibilities that API technology offers and that they will also implement it in other departments besides the payments unit. On the other hand, KBC believes banks are moving towards a more open model where they focus on their core business and exchange information with other commercial companies. PSD2 is a first step towards this open banking model. Finally, Belfius predicts that banks will have to increase their investments in IT in order to make maximum use of new technologies such as AI and blockchain.

In summary, all interviewed banks see PSD2 as an opportunity that goes beyond offering simple payment initiation services and account information. They all have the aspiration to become a digital platform that competes for customer contact. To achieve this, partnerships with FinTechs and other non-banks will be crucial. Note that the banks are not naive and are well aware of the threats posed by PSD2. As a legal expert, Valcke thinks that PSD2 is a missed opportunity to extend this idea of open data access to other industries such as BigTech companies, for example. Then all companies would be equal, since the increased amount of data would then allow banks to build new models and products as well. ING Belgium adds that investing in IT is not only an opportunity but even a requirement to keep up with other companies. If they would not do so, PSD2 would become a threat to banks.

6. Conclusion

In this section we answer the research question and present the main conclusions of our research. The academic relevance as well as the limitations of this research will be discussed. Finally, recommendations for future research are presented.

6.1 Observations

1. Belgian banks adopted a proactive approach to comply, but still have some challenges ahead of them.

KBC, Belfius, BNPPF and ING Belgium claim that they fully support the PSD2 initiative. They, some quicker than others, adopted a positive approach to comply since the start. Through close cooperation between the banks and regulatory bodies such as the EBA and NBB, they were able to start developing the API gateways on the basis of assumptions. By applying this forward-looking approach, they were all compliant by 19 September 2019. Later on, opinion papers forced the banks to review their initial solutions. Unfortunately, these revisions end up on a pile of IT projects and therefore it takes several months to almost a year before these changes can be implemented. Furthermore, if banks really want to benefit from the advantages of APIs, they need to be continuously improved.

Even though the focus of this research wasn't on the compliance with PSD2 itself, this paper also identified some differences between the major financial institutions in this field. Since PSD2 is technology-neutral, banks had to make a lot of decisions themselves. They had to decide whether to build the solution in-house or to partly out-source the project. Furthermore, the regulator did not specify an implementation standard, so they had to make a choice here as well. Most banks chose to follow the Berlin Open Group, but BNPPF preferred the French standard STET. Also banks that were part of a banking group had to decide whether they should develop the API gateway at group-level, or whether they should pass the responsibility on to the different entities. Both ING and BNP Paribas chose the first option.

2. All researched banks do more than complying, or have plans to do so.

The interviewed banks claimed that they see PSD2 as an opportunity to rethink their business models and generate new profit pools. All respondents indicated that their strategy was to become a 'bank as a platform'. We can therefore expect that this will become a standard in the banking industry of the future. In this area however, KBC and Belfius currently stand out from the other two banks. They are the only two banks that compete for customer relevance by offering both PIS and AIS. Besides offering these basic services, they

also have a very extensive range of advanced products in their digital channels. They are actively looking for reliable partners who can add both transaction and non-transaction products to their digital channels. By partnering with FinTechs, banks can bring products to market faster and rely on their technological expertise. Banks, on the other hand, offer scale, reach, expertise in financial products and trust to customers, which makes banks and technology companies a perfect match (Cortet, Rijks, & Nijland, 2016; Guibaud, 2015). These collaborations are also expected to further increase in the future. Other product that go beyond PSD2, such as real-time financial advice, advanced credit worthiness and Know-Your-Customer services, are in the pipeline. Some of these services however still require clarification from the regulator regarding the relationship of PSD2 with other regulations, such as GDPR. We still need to see how this will evolve in the future.

Other banks seem to have missed this train, but are indicating that they will push ahead with PSD2, as are KBC and Belfius. The open banking teams of ING Belgium and BNPPF are looking for potential use cases and are currently negotiating with external parties to implement new products. It is worth noting that this research does not attempt to put forward certain strategies as 'better'. It is important that each bank decides for itself what its ambition is for the future. This includes developing an appropriate strategy, as suggested above, that suits the organisation best and takes into account the potential risks and opportunities involved. Banks must also be aware of the impact that this choice will have on their customer relevance and business model.

3. PSD2 has been an accelerator for the digitisation process of the banks.

One of the objectives of PSD2 was to foster innovation in the payments industry. Since traditional banking is characterized by slow and heavy structures, this could pose a big challenge to them. The four observed banks indicate that PSD2 has accelerated their digitisation process and in that sense had a positive impact on their organisation. PSD2 has been a call to action and all banks have, all to a different extent, responded accordingly. Banks that used API technology to comply with the directive found that this technology offered great potential beyond compliance. We observed that some banks are already capitalising on this and pushing this technology to non-payment departments. Some banks have already indicated that this allows them to tackle certain manual, risky and costly products and improve efficiency. Therefore, we can state that PSD2 has accelerated the digitalisation of banks and stimulates innovation in the sector.

6.2 Academic relevance

PSD2 has received a lot of attention in the literature in recent years. Research has already been carried out on the many difficulties involved in PSD2 implementation. However, there is little empirical research on how this is done in practice, let alone in the Belgian market. We examined how the various Belgian large banks deal with the slow and dispersed guidance they receive from the regulator. The compliance process of the banks was mapped and mutual differences were exposed. Furthermore, we examined the strategic decisions that Belgian banks make due to PSD2. Banks will face increased competition in the payments market which should encourage them to do more than merely comply. Four generic strategies were identified to classify the strategic actions performed by Belgian banks.

Another objective of this paper was to fill the gap in the literature regarding the strategic opportunities that new regulations may offer to the affected industry. Existing literature looks at regulation mainly from a negative point of view, but in recent years it seems to be shifting towards a more positive approach. We examined how banks responded to regulatory change and more specifically how they went beyond mere compliance. PSD2 is a good example to apply such analysis. Since this topic is relatively new and even more impact on the payments market is expected when all banks become fully compliant, it is important to follow these evolutions closely. It is therefore an ideal subject for further research.

6.3 Limitations of the research

In this paper, we have focused on the strategic decision-making of Belgian banks. Since they are the driving force behind PSD2 with by building the API gateways and facilitating access to TPPs, banks are a very interesting research subject. We have also addressed the fact that it can be interesting for banks to enter into partnerships with third parties such as FinTech. PSD2 encourages these collaborations, but in this research we have focused less on the perspective of TPPs. After all, these external parties will also be able to respond to the strategic actions of banks. In other words, this research was not able to capture the dynamic aspect of strategic decision-making and gave a fairly one-sided overview of the topic.

Furthermore, we discussed the difference between the biggest Belgian banks regarding strategic decisions due to PSD2. The aim of this thesis was to gain as much information as possible on this topic. It is, however, too early to draw conclusions on the effectiveness of strategies. Customers have to be further educated and banks still have a lot of room for improvement. This study does not look at whether it is better to adopt a 'bank as a platform' strategy or a more defensive approach. How can banks make maximum use of certain strategies to deal with PSD2? What will be the most effective strategy? Future normative research about the optimal strategy to deal with PSD2 would add significant value to the literature.

6.4 Recommendations for future research

Since PSD2 is a directive that is binding for all PSPs operating within the European Union, it would be interesting to investigate whether the observed behaviour is generalizable across the European market. This paper focuses on the Belgian market. Therefore, it may be interesting to use this research as a basis for a comparative study for different countries within the European Union, or even beyond, with for example candidate member states. Furthermore, as mentioned earlier, this thesis focused on the strategic responses of banks. A follow-up study that extends the scope to other players in the ecosystem would contribute significantly to the literature.

With PSD2, the EU is trying to push open banking in the financial sector. It is expected that a PSD3 is on the way, in which the regulations would open up savings accounts or securities accounts, for example, in addition to current accounts. There are also other industries that could undergo a similar evolution in the future. The European Insurance and Occupational Pension Authority is investigating the possibilities of opening up the insurance value chain. Similar research could therefore be conducted in the context of PSD3 or 'Open Insurance'. How will organisations deal with these regulatory changes, what opportunities exist beyond compliance or how can they already anticipate them? These are possible research questions to approach this topic.

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